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November 27, 1996

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Mr. William F. Caton
Acting Secretary
Federal Communications Commission
1919 M Street, N.W., Room 222
Washington, D.C. 20554

Federal Communications Commission
Office of the Secretary

Re: Ex Parte Contact in ET Docket No. 95-18

Dear Mr. Caton:

On Tuesday, November 26, 1996, Dave Otten of Celsat America, Inc. and Antoinette Cook Bush of Skadden, Arps, Slate, Meagher & Flom met with the FCC staff identified below. The primary purpose of the meeting was to discuss the status of the above-referenced proceeding and the information contained in the enclosed documents.

Sincerely,



Antoinette Cook Bush
Counsel for Celsat America, Inc.

cc: David Otten
Ruth Milkman
Sean White
Bruce A. Franca
Charles J. Iseman
Dr. Lynn Remly

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HOW CELSAT AMERICA'S HYBRID MOBILE SATELLITE/PERSONAL COMMUNICATIONS SERVICE SYSTEM CAN SHARE WITH 2 GHz INCUMBENTS

Celsat America, Inc. ("Celsat") has consistently stated before the Commission in rulemaking proceedings that it can operate in the 1990-2025 and 2165-2200 MHz bands without causing interference to Broadcast Auxiliary/Electronic Newsgathering ("BAS/ENG") facilities nor Fixed Microwave Service ("FS") facilities.¹ Celsat's hybrid system will enable the delivery of advanced wireless mobile communications over terrestrial and satellite frequencies throughout the United States.

The Celsat hybrid (or dual mode) mobile units transmitting via satellite in the BAS/ENG allocated band will primarily operate in relatively remote areas away from BAS/ENG receivers and away from terrestrial cell sites, which is why they will transmit to satellites instead of to terrestrial cell sites. Therefore, Celsat would be able to provide service without pushing existing users out of those bands or requiring any changes in their current operations. However, there will be some instances where Celsat mobile units will use Celsat satellites in urban areas where BAS/ENG installations are likely to be located. In such locations, Celsat will prevent its mobile unit transmissions from interfering with BAS/ENG receivers by implementing one or both of the following two techniques that Celsat refers to as (1) the warning signal system and (2) the warning message system:

1. Warning Signal System. This system is comprised of narrowband warning signal transmitters operating in the 2165 to 2200 MHz band at a frequency and power level that will not interfere with any FS system, and includes transmitters collocated with the BAS/ENG receivers that are operating in the 1990 to 2025 MHz band. The warning signal transmitter at each site will utilize an antenna with the same coverage and pattern as that used by the BAS/ENG receiver at that site. When a Celsat mobile unit detects a warning signal, it informs the unit that it is just outside the range of interfering with a BAS/ENG receiver, and the Celsat mobile unit will automatically stop transmitting or, if the unit is turned off, will be prevented from beginning a transmission. All Celsat mobile units will automatically seek to detect a warning signal before they begin

¹ See Comments and Reply Comments of Celsat America, Inc. in ET Docket No. 95-18 and Comments of the MSS Coalition in WT 95-157.

a transmission. A safety margin is added that will accommodate multipath fade margins and other differences in propagation attenuation between the two frequency bands.²

2. Warning Message System. This system is comprised of special narrowband Celsat receivers collocated with the BAS/ENG receivers that use an antenna with the same coverage and pattern as the BAS/ENG antenna. The special Celsat receivers will operate in the 1990-2025 MHz band between two wideband BAS/ENG signals. The received Celsat signals will be at a level to prevent interference with BAS/ENG systems. The signals received by the special Celsat receiver are transmitted in a TDMA mode by Celsat mobile units operating in the general location of the fixed BAS/ENG site. These transmitted signals will carry the mobile unit identification over the "order wire" channel and will be set at a power level higher than the communication channels that might operate anywhere in the 1990 to 2025 MHz band. When the special Celsat receiver at the BAS/ENG site detects the signal, a warning message will be transmitted to the potentially interfering mobile unit to discontinue transmitting. After a five minute time period, that mobile unit will be allowed to turn on the order wire channel and redetermine whether there is continued interference (and restart the shut-down process if necessary).

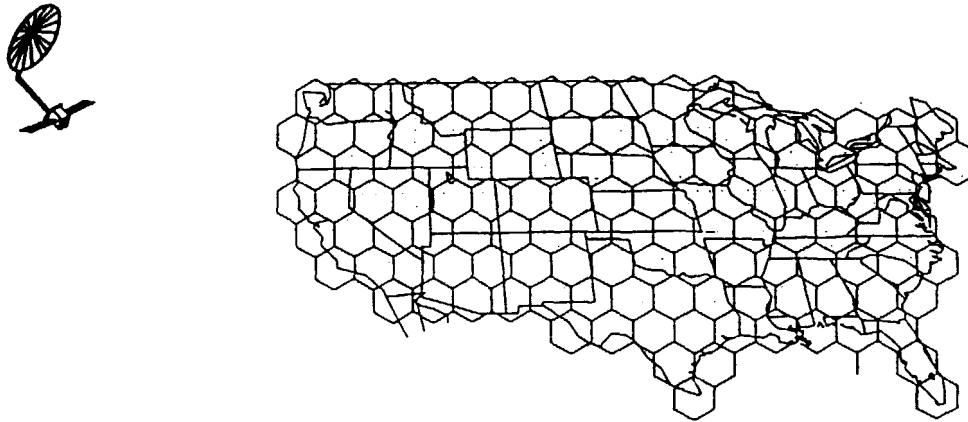
Both of these system approaches are proprietary to Celsat, and patent applications are being prepared.

² This system approach is based on the physical principal of signal path reciprocity for signals operating at nearly the same frequency in both directions along the same path, i.e., they propagate along the same path or very nearly the same path. Thus, foliage attenuation, building shadowing, space loss, etc., are the same or very nearly the same and are amenable to computational corrections to account for any difference between the potentially interfering signal and the warning signal attenuation due to frequency in setting the warning signal ERP. The region around the sites will be surveyed after installation of the warning signal transmitter to ensure proper functioning of the system.

Introduction to Celsat America, Inc.

- **Celsat Inc. Began Operations In 1991 and filed for an FCC “Pioneer’s Preference” In 1992**
- **U.S. Patents Granted In 1991, 1994, 1995 and 1996**
 - Numerous additional U.S. and foreign patents pending
- **Cellular Communications Inc. and Celsat, Inc. formed Celsat America Inc. as a Joint Venture In 1994**
 - Cash investment from Cellular Communications, Inc. for 18% (and an option on an additional 7%)
 - All patent, FCC, and Intellectual property rights from Celsat, Inc. for 82%
- **Air Touch buys CCI and its interest in Celsat America In 1996**
- **Filed for an FCC Operational License in 1994**

CELSAT AMERICA SYSTEM SUMMARY



- **LOW COST SYSTEM**
 - \$2 PER POP FOR A NATIONWIDE SYSTEM**
 - CAPITAL COSTS: 1¢ PER MINUTE FOR A PHONE CALL**
- **NATIONWIDE COVERAGE WITH ONE SATELLITE**
- **FULL FEATURE SET**
- **TINY, LOW POWER MOBILE PHONE**
- **PCS COMPATIBLE**

System Architecture

- **Single GEO Satellite for U.S. Coverage
Conventional Except for 20 Meter Antenna**
- **Large Number of Spot Beams**
- **Additional Satellite(s) for Position Determination, Capacity, and Backup**
- **2 GHz Operation**
- **CDMA and/or GSM and/or TDMA**
- **Dual Mode**

VISION

TECHNICAL SITUATION

Celsat's Dual Mode (Satellite and PCS) handhelds as compared to single mode PCS handhelds will:

- **Be the same size**
- **Weigh the same**
- **Use the same total power**
- **Cost almost the same**

MARKET EXPECTATION

Many new wireless users will choose the Celsat Dual Mode phone over ground only PCS phones for:

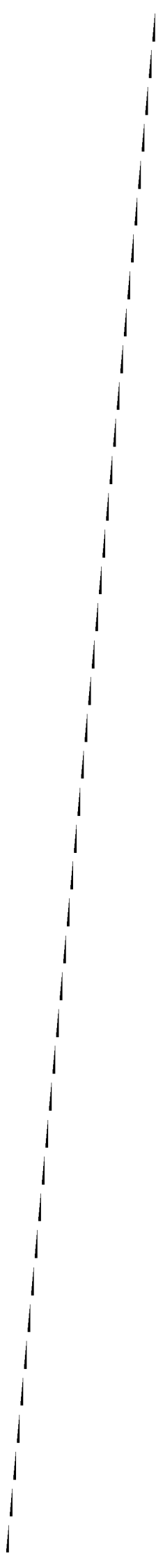
- **low cost of service**
- **Full Immediate U.S. roaming at a low flat rate**
- **safety**
- **position determination**

All Elements Are Well Proven

- Digital Cellular/PCS is well developed.
- Operation in the 2 GHz bands
 - Well developed for PCS.
- Celsat's satellite design
 - Conventional three axis bus
 - Conventional payload with a 20 meter diameter reflector for mobile service
- Dual mode space/ground operation
 - Well developed by Ericsson (among others)

Celsat Used Proven Technologies to Synthesize A New System

**SPLIT SECOND
TIME DELAY**



Test Results

If Echo and Time Delay are Both Present
Perceived Quality Degrades As Both Exceed Certain Thresholds

The State Of The Art Of Current Low Cost Echo Cancelers Is Such That GEO Time Delay
Has No Perceived Impact On Most Users

COMSAT Labs Report, November 1988:

“The results of numerous tests under laboratory and field conditions show conclusively that elimination of echo results in fully acceptable performance of single-hop (GEO) satellite circuits”

Recent Tests By Celsat Verify Comsat's Results

Time Delay

- **No Impact on:**
 - Fax**
 - Data**
 - Paging**
 - Position determination**
- **Perception Problem Largely Disappears with Echo Cancelers**
- **Trade Off for Much Lower Cost**

Celsat's Market Differentiation:
Very Low Cost, High Quality and Important New Features